Quality Control

<b>Work Orde</b> March-28-13 12		169		*991	169*				aranimon - M		Page 1
Item ID: Revision ID:	D3953-3		1	Accept	*N900	040	100	)*	Setup Start	*N:	S1*
	Gas Spring St	ud, Lid							Stop	*N:	S2*
Start Date:	3/27/13	Start Qty: 12.00	*12*		Cust Item !	ID:		•			
Required Date: Reference:	3/27/13	Req'd Qty: 12.00	*12*		Customer:					. •	
Approvals:	Process Pla	in: MC5	Date: 13-03-28	Tooling:	D	ate:	_	I	Run Stari		R1*
	QC:		Date:	SPC (Y/N):	D	ate:	· ·		Stop	*N	R2*
Sequence ID/ Work Center II	)	Operation Description		Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Rev	ision Nbr						-,			
D3953	С										^
100				0.00					1.		04 04 -8
*100* Doosan		Memo		0.00	13-	4.2		12	4	<del></del>	<b>9</b> -8 <sup>-</sup>
Doosan Lathe		Turn as per t FOLIO REV DWG REV:	folio FA852 & DWG								
		DEBURR									
110 *440*		QC2- Inspect parts off m	achine FAI/FAIB	0.00	B -	4.2		(7	_ 4		04 04
*11 <b>0</b> *		Memo		0.00							

									DQA:	Date:	
NCR: Y	es / No				WORK ORDER NON-O	CON	FORM	MANCE / UPDATE	OA Classide	Data	
									QA Closed:	Date:	the state of the s
					DISPOSITION	ł		AGAINST DE	PARTMENT,	PROCESS	
Work Orde	er:				Rework	1 I		Skid-tube Crosstube	1	Water Jet	Engineering
Dart N	lo.				Scrap	1 1		Machining Small Fab	Pro	d. Eng. Coor.	Quality
Part N				<del></del>	Use-as-is	1		noforming Finishing	ı	e/Packaging	Other
NCR N	10.				Work Order Update	1		Large Fab Composite	,	Supplier	
Root				Descri	ption of work order update	ln	itial	Action	Sign &		
Cause	Date	Step	Qty	(	or Non-conformance	Chie	ef Eng	Description	Date	Verification	QC Inspector
Doc/Data											
Equip/Tooling											
Operator											
Material											
Setup									•		
Other											
Process						}					
Supplier									-		·
Training											
Unapproved		<u> </u>	<u> </u>	<u> </u>		A111.7	CATE	CORV		L	<u>l</u>
Landia	ng Gear			·	General	AULI	CATE	JONT			
Lanuii	Bending			Γ	Bend	$\Box$	Grain		Ovalized		Pressure/Forced
	Centre N	ot Conco	ntric to	0/5	BOM/Route	$\vdash$	Hardwa	re	Over/Under	tolerance	Temperature/Cure
	Cracks	or concei	intric to	~,	Broken/Damaged	<b>—</b>		on Incomplete	Part Incorre	<b>-</b>	Weld
	Crushed/	Crimned		<u> </u>	Burrs	-	•	ions Incomplete/Unclear	Part Lost/Mi		Wrong Stock Pulled
	Cuffs	cimpeu,		<u> </u>	Contamination	-		nance	Part Moved		]
	Heat Trea	at ·			Countersink	$\vdash$	Mislabe	<u> </u>	Positioned V	Vrong	

Misread

Offset

Out of Calibration

Out of Sequence

Outside Dimensions

Power Loss/Surge

Other

Ripples in Bend

Turning Sequence

Wave/Twist in Tube

Inspection Strip in Tube

Torque Waves in Extrusion

Cut Too Short

Drill Holes

Drawing

Finish

Folio

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

# \*99169\*

Page 2

March-28-13 12:55:31 PM

Quality Control

Accept \*N900040100\* Setup Start Item ID: D3953-3 **Revision ID:** Stop Item Name: Gas Spring Stud, Lid **Start Date:** 3/27/13 **Start Qty: 12.00 Cust Item ID:** Req'd Qty: 12.00 Required Date: 3/27/13 **Customer:** Reference: Run Process Plan: \_\_\_\_\_ Date: \_\_\_\_ Tooling: Date: Approvals: Stop Date: SPC (Y/N): Date: OC: Tool # Plan Tool ID Reject Reject Insp. Set Up/ Accept Sequence ID/ Operation Qty Number Stamp Description Code Qty Work Center ID **Run Hours** OAS 0.00 QC8- Inspect parts - second check 120 13/04/02 \*120\* 0.00 Memo Quality Control 0.00 Identify as per dwg & Stock Location:\_ 130 \*130\* 57076 0.00 Packaging Memo Packaging OC21- Final Inspection - Work Order Release 0.00 140 \*140\* 0.00 QC Memo

N 13-04-3

												DQA:	Dat	te: _	
NCR:	Yes /	No				WORK ORDER NON-C	O	NFOR!	<b>IANC</b>	E / UPDATE		•		-	
	•									e and the second se		QA Closed:	Dat	te:	
Work Orde	or:					DISPOSITION				A	GAINST DEI	PARTMENT	PROCESS		
WOIK OIGE	=1.			····	<del></del> .	Rework	1		Skid-tu	be ☐ Cro	osstube		Water Jet		Engineering
Part N	No					Scrap		r	∕Iachini	ing Sm	nall Fab		d. Eng. Coor.		Quality
						Use-as-is			oformi	~ <b></b> _	inishing	Rec/Stor	e/Packaging	1	Other
NCR N	No					Work Order Update	],		Large F	ab Con	nposite		Supplier	لـــا	
Root			•		Descri	ption of work order update	i	Initial		Action		Sign &			
Cause		Date	Step	Qty	C	or Non-conformance	Ch	ief Eng		Description	1	Date	Verification	n	QC Inspector
Doc/Data															
Equip/Tooling															
Operator															
Material					•										
Setup 🕺	O														
Other	.4														
Process															,
Supplier															
Training															
Unapproved															
						F	AUL	T CATE	GORY						
Landi	ng Gea	r	-			General		_							Ī
	Ве	nding				Bend		Grain				Ovalized			Pressure/Forced
	Ce	ntre No	t Concer	ntric to	o/s	BOM/Route		Hardwa	re			Over/Under	tolerance		Temperature/Cure
	Cr	acks				Broken/Damaged		Inspecti	on Inco	mplete		Part Incorre	ct		Weld
	Cr	ushed/0	Crimped.			Burrs		Instruct	ions Inc	omplete/Unclea	ır	Part Lost/M	issing		Wrong Stock Pulled
	Cu	ffs				Contamination		Mainte	nance			Part Moved			
	Не	at Trea	t			Countersink	Г	Mislabe	led			Positioned V	Vrong		_
	ins	spection	Strip in	Tube		Cut Too Short		Misread		•		Power Loss/	'Surge		Other
	Rij	oples in	Bend			Drill Holes		Offset				-			

Out of Calibration Out of Sequence

Outside Dimensions

Turning Sequence

Wave/Twist in Tube

Torque Waves in Extrusion

Drawing

Finish

Folio

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

March-28-13 12:55:31 PM

Work Order ID:

99169

Parent Item:

Comments:

D3953-3

Parent Item Name:

Gas Spring Stud, Lid

IPP RevA: New issue DD verified by:EC

**Start Date: 3/27/13** 

Required Date: 3/27/13

**Start Qty: 12.00** 

Required Qty: 12.00

	10.03.02 verified b	y:EC											
Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M304RO.750		Purchased	No			100	f	83.9410	0.125	1.578946	8		
304 SS Roundbar .750									· · · · · · · · · · · · · · · · · · ·				

IPP Rev:B as per dwg revC DD

Location	Loc Qty	Loc Code
MAT028	67.507	
116501	3.492	
116623	1.708	
121282	4.89	
122386	5.066	
123721	52.351	
MAT029	16.434	
117481	3.434	
118509	12.4	
120124	0.6	

NCR: Yes / No	WORK ORDER NON-COI	NFORMANCE
Work Order:	DISPOSITION	

Folio

NCR:	⁄es	/ No					WORK ORDER NON-O	COI	VFORM	MANCE / UPI	DATE	QA Closed:	Da	te:	
Vork Orde	er:						DISPOSITION	7			_	EPARTMENT			Consideration of the state of t
Part N			· · · · · · · · · · · · · · · · · · ·				Rework Scrap Use-as-is		Thern	Skid-tube  Machining  noforming	Crosstube Small Fab Finishing	<b>-</b> -i	Water Jet d. Eng. Coor. re/Packaging		Engineering Quality Other
NCR N	No.	•					Work Order Update	]		Large Fab	Composite		Supplier	<u>ا</u> ــــــــــــــــــــــــــــــــــــ	
Root					Desc		tion of work order update	1	Initial		tion	Sign &			
Cause		Date	Step	Qty		0	r Non-conformance	Ch	nief Eng	Desci	ription	Date	Verificatio	n	QC Inspector
oc/Data quip/Tooling perator															
laterial															
etup															
ther			}		, T										
rocess															
upplier															
raining								1						ŀ	
napproved															
							F	ΑUL	T CATE	GORY					
Landi	ng (	Gear			_		General		_		_	<del></del>			<b>.</b>
		Bending					Bend		Grain			Ovalized			Pressure/Forced
	L	Centre No	ot Concer	ntric to	o/s		BOM/Route		Hardwa	ire		Over/Unde		<u></u>	Temperature/Cure
		Cracks			L		Broken/Damaged		-l `	ion Incomplete	_	Part Incorre			Weld
	L	Crushed/	Crimped.				Burrs		4	ions Incomplete/	Unclear	Part Lost/N	lissing		Wrong Stock Pulled
		Cuffs					Contamination		Mainte			Part Moved			
		Heat Trea	it				Countersink		Mislabe	eled	L	Positioned	_		٦
		Inspection	n Strip in	Tube			Cut Too Short		Misread	d		Power Loss	/Surge	L	Other
		Ripples in	Bend				Drill Holes	<u></u>	Offset				. <del></del>		
		Torque W	/aves in E	xtrusio	n [		Drawing		Out of 0	Calibration					
		Turning S	equence			,	Finish		Out of	Sequence					

Outside Dimensions

DQA: \_\_\_\_ Date: \_\_\_\_

Wave/Twist in Tube

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

DART AEROSPACE LTD	Work Order:	99169
Description: Gas Spring Stud, Lid	Part Number:	D3953-3
Inspection Dwg: D3953 Rev: C		Page 1 of 1

## FIRST ARTICLE INSPECTION CHECKLIST

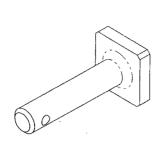
X First Article Prototype

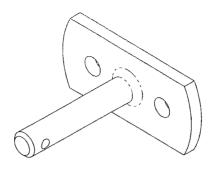
Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.75	+/-0.030	. 750	,		29.02	
0.56	+/-0.010	. 556			4	
0.281	+/-0.010	291			(,	
1/4-28 UNF-2A	N/A				(,	
Major Ø	Max = 0.2490 Min = 0.2425	.245		,	24.06	· · · · · · · · · · · · · · · · · · ·
M.O.W.	Max = 0.26687 Min = 0.26357	25.265	- /		29.00	
Ø0.098	+0.004/-0.001	.078			28,02	
Ø0.250	+/-0.010	.245			(1	
0.170	+/-0.010	,169			11	
0.330	+/-0.010	, 370			t,	
0.13	+/-0.030	, 170			l:	
R0.06	+/-0.030	. H			Cage	
1.31	+/-0.030	1.312			22.1	
	•			-		

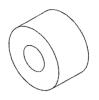
	2A				-
Measured by:	04	Audited by:	D.A DAS	Prototype Approval:	N/A
Date:	3.4.2	Date:	13/04/02 0-89	Date:	N/A

Rev	Date	Change	Revised by	Approved
Α	09.10.22	New Issue	KJ .	
В	09.12.14	Dwg Rev updated	KJ DE	M
			· //	











D3953-1 GAS SPRING BRACKET (FULL LID)

D3953-3 GAS SPRING STUD, LID

**D3953-5 GAS SPRING STUD, BASE** 

**D3953-7 GAS SPRING SPACER** 

D3953-9 GAS SPRING WASHER











D3953-11 GAS SPRING SPACER

D3953-13 GAS SPRING SPACER (FULL LID)

D3953-15 GAS SPRING BRACKET (SPLIT LID)

D3953-17 GAS SPRING SPACER (SPLIT LID)

D3953-19 GAS SPRING BRACKET (SQUARE BASKET)

D3953-21 GAS SPRING BRACKET (SQUARE BASKET) 

SHCa REi -ENG:

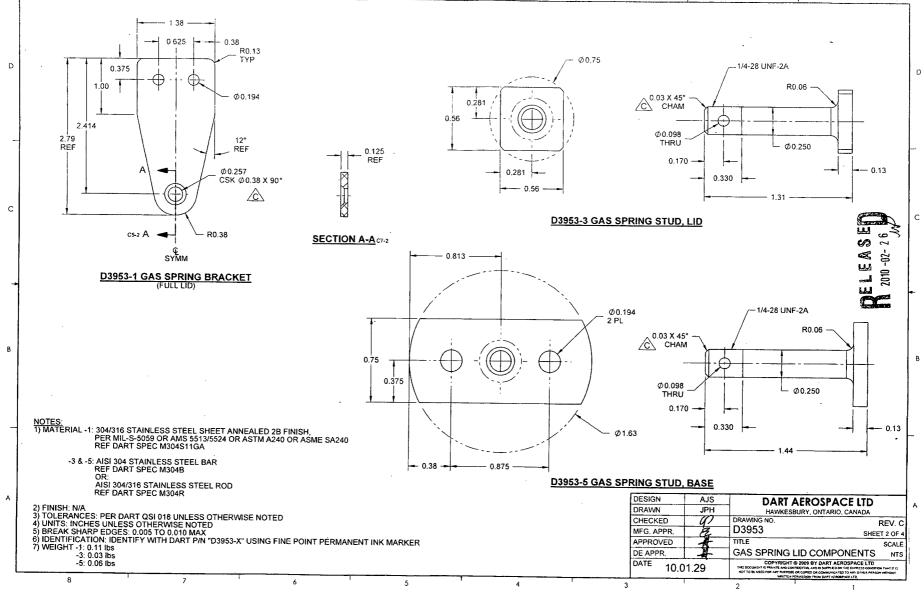
UNCONTRG. SUBJECT To 1.

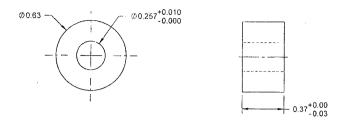
WITHOU

NO. 99169 MLS 13-03-20

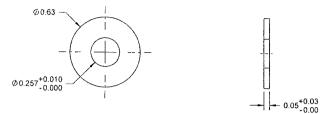
<u>&</u> PARTS -19 & -21 ADDED (SHT 18 4); CSK CALLOUT WAS CHAM (C6-2, 86-3, C6-4); © SYMM WAS © SYM ABOUT (C7-2, C7-4); SECTION C-C REPOSITIONED TO B2-4 REASON: ADDL PARTS REQD; DRAFTING ERRORS 10.01.29 SHEET 3 ZONE C1, DIM 0.05 MIN WAS 0.13, MULTIPLE DIMENSIONS MIN/MAX REMOVED TOLERANCE ADDED, REASON: DIFFICULTY INSTALLING COTTER PIN AT NEXT ASSY. AJS 09.11.11 NEW ISSUE AJS 09.07,27

REV.		DESCRIPTION	BY	DATE		
DESIGN	AJS	DART AEROSPA	CFIT	n		
DRAWN	JPH	HAWKESBURY, ONTARIO				
CHECKED	a	DRAWING NO.		REV. C		
MFG. APPI	R. 3	↑D3953	S	HEET 1 OF 4		
APPROVE	D -47	TITLE		SCALE		
DE APPR.	+#	GAS SPRING LID COMPO	NENT	S NTS		
DATE 1	10.01.29	COPYRIGHT © 2009 BY DART AEROSPACE LTD THIS DOCUMENT IS FREMITE AND COMPRESSION, AND IS SEPREMED ON THE REPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY HUMBOS ON CODING ON COMMUNICATION TO NOT HOME PRESSON WHITHOUT				

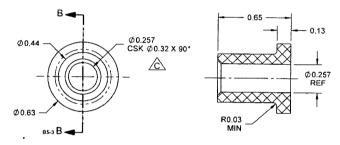




#### D3953-7 GAS SPRING SPACER

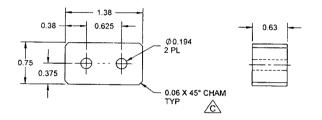


### D3953-9 GAS SPRING WASHER



**D3953-11 GAS SPRING SPACER** 

SECTION B-B 87-3



#### **D3953-13 GAS SPRING SPACER**

DESIGN	AJS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA		
DRAWN	JPH			
CHECKED	a	DRAWING NO.	REV. C	
MFG. APPR.	8	T D3053	SHEET 3 OF 4	
APPROVED	-	TITLE	SCALE	
DE APPR.	#	GAS SPRING LID COMPONENTS	NTS	
DATE 10.01.29		COPYRIGHT © 2009 BY DART AEROSPACE LTD THIS BOCUMENT BY MANUTE AND COMPOSITION AND IS SUPPLIED ON THE SPREED MANUTE AND COMPOSITION THAT IT IS NOT THE UNEX FOR ANY IMPOSITION COMPOSITION TO ANY OTHER PERSON MANUTED.		

NOTES: 1) MATERIAL -7,-9 & -11: DELRIN II 150E OR ACETRON GP ACETAL, BLACK REF DART SPEC M-DELRIN-R

-13: AISI 304 STAINLESS STEEŁ BAR REF DART SPEC M304B

Α

- 2) FINISH: N/A
  3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
  4) UNITS: INCHES UNLESS OTHERWISE NOTED
  5) BREAK SHAPR EDGES: 0.005 TO 0.010 MAX
  6) IDENTIFICATION -13 ONLY: IDENTIFY WITH DART P/N "D3953-13" USING FINE POINT PERMANENT INK MARKER
  7) WEIGHT -7/-9-11: < 0.01 lbs EACH
  -13: 0.17 lbs

